

Title: Student Transformational Experiences Project

Institution: Chief Dull Knife

College State: Montana

P.I.: Jeffrey Hooker

Summary: Previous NASA opportunities at Chief Dull Knife College proved that students who remain involved with research during their studies at a two-year college generally remain engaged longer in the entire educational process, including transfers to 4-year institutions. The implementation of the Student Transformational Experience and its “STEP-wise” strategy provides students with an incremental introduction to research environments at CDKC and at partnering higher education institutions and research organizations such as NASA. Additionally, the project will attempt to increase the overall success of students seeking to transfer to 4-year institutions to complete a bachelor degree in STEM. A “home and away” approach to the incremental introduction will combine week-long experiences at collaborating research institutions with week-long experiences back on the reservation at CDKC with follow-up mentoring. Finally, the Student Transformational Experiences project will emphasize research projects with environmental issues or other issues that directly affect the students and their home communities.

Intrinsic Merit: The proposed program activities are innovative and address both technical and educational merit. The proposers have extensive recent experience in promoting STEM-related education and research in a tribal setting. With their experience from previous awards, the proposers have established a network of local and regional educational partners with whom they maintain ongoing relationships. The proposing team assessed the results and impact of previous efforts to promote STEM initiatives and they have identified several specific areas in which improvements can be made. The incremental “STEP-wise” approach is innovative and merits further study and analysis. This program has the potential to address a much wider issue applicable to minority students overcoming economic and cultural barriers to engage in university or large organization research projects away from home.

The technical merit of the proposal team includes a continuous record of external support in STEM areas. Although CDKC is a small institution and somewhat physically isolated, they have established strong ties with other state, regional, and national entities in support of their local initiatives. The proposed plan identifies projects and areas of study especially relevant to the tribal community and exploits NASA expertise in areas of climate change and remote sensing using such observing platforms as tethered balloons, high-altitude weather balloons, and drones.